

### 5.3.2.3 REMOTE SENSING PALLET ALIGNMENT RESULTS

*As reported in Reference 5.3.2.3-1*

**Reference 5.3.2.3-1 - IOM, "Cassini Remote Sensing Pallet Alignment Results", E. Motts, May 27, 1997**

#### 5.3.2.3.1 SUMMARY

The Cassini Remote Sensing Pallet (RSP) Instruments were measured to determine the alignment of each with respect to the Narrow Angle Camera (NAC) frame of reference. The Wide Angle Camera (WAC), the Composite Infrared Spectrometer (CIRS), the Ultraviolet Imaging Spectrograph (UVIS), the Visible & Infrared Mapping Spectrometer (VIMS), and two Stellar Reference Units (SRU) were measured. All instruments meet the requirements of JPL Document CAS-3-170, *Accuracy Requirements and System Capabilities*, Revision C.

#### 5.3.2.3.2 DESCRIPTION OF TEST

Tests were performed in accordance with JPL Procedure CAS 337, *Cassini Remote Sensing Pallet Instrument Alignment Verification*, released September 17, 1996. The alignment mirror or cube on each instrument was measured in autocollimation using digital optical theodolites. The boresight direction of each instrument was calculated based on previously reported offsets, and each boresight was compared to that of the NAC.

Alignment measurement of the two SRU's was performed in JPL SAF Hi-Bay 2 on 3/7/97. All other instruments were measured at KSC PHSF on 5/20/97. The results of both measurements are reported in Table 5.3.2.3-1 and Table 5.3.2.3-2, following, as the final alignment values.

Angles are reported in the ISS NAC coordinate system, with the corresponding spacecraft coordinate system noted. Angle directions conform to the "right hand rule." Please note that previous RSP alignment measurements were reported using the angle convention of the theodolite, and so may differ in sign from these final values.

#### 5.3.2.3.3 CONCLUSIONS

All alignment results conform to the requirements of CAS-3-170; Section 4.2.7.6 for the SRU's, and Section 4.2.2.1 for all other instruments.

<b>CASSINI REMOTE SENSING PALLET INSTRUMENTS - FINAL ALIGNMENT</b>					
<u>LOS (Instrument) / LOS (NAC). Average of three data sets. All values in milliradians.</u>					5/20/97
Instrument	Angle in NAC X-Z Plane (S/C Y-Z Plane)	Knowledge (+/-, 3 sigma)	Angle in NAC Y-Z Plane (S/C X-Y Plane)	Knowledge (+/-, 3 sigma)	Control Requirement
WAC	-0.36	0.08	-0.77	0.08	<1.2
CIRS	-0.50	0.23	-0.51	0.23	<1.4
UVIS	0.23	0.11	0.11	0.11	<1.2
VIMS	0.07	0.11	0.20	0.11	<0.8

**Table 5.3.2.3-1 - Cassini Remote Sensing Pallet Instruments - Final Alignment**

<b>CASSINI STELLAR REFERENCE UNITS - FINAL ALIGNMENT</b>					
<u>LOS (SRU) / LOS (NAC). Average of three data sets. All values in milliradians.</u>					3/7/97
SRU S/N	Angle in NAC Y-Z plane. (S/C X-Y plane)	Knowledge (+/- 3 sigma)	Angle in NAC X-Y plane. (S/C X-Z plane)	Knowledge (+/- 3 sigma)	Control Requirement
FM2	-0.44	0.15	-0.45	0.15	<0.6
FM3	0.26	0.15	0.13	0.15	<0.6

**Table 5.3.2.3-2 - Cassini Stellar Reference Units - Final Alignment**